Grenadier BRAT
Blue Force Tracking

Grenadier BRAT (Beyond line of sight Reporting And Tracking) is a lightweight blue force tracking device employing the global positioning system, a low probability of intercept/detection waveform, and other national capabilities to provide a continuous, near real-time, beyond line-of-sight tracking capability for critical assets.

The primary components of the Grenadier BRAT system include the transponder, a hand-held terminal (HHT), a small (approximately 3.5") UHF transmit antenna and a Global Positioning System (GPS) receive antenna. A planning computer is also used to create, manage and load the Grenadier BRAT system files prior to a mission. The transponder is small and light enough to be used in either man-packed, military vehicle or aircraft configurations. The man-packed option gives dismounted patrols the ability to report their location to higher echelons. In the man-packed configuration the system uses a separate rechargeable battery pack; but when used in vehicles or aircraft the Grenadier BRAT can operate from vehicle or aircraft power.

Tracking the Blue Force

The system works by first calculating position information through the signal it receives from GPS satellites. After location has been determined, Grenadier BRAT transmits its GPS position, along with unit identification and a brevity code via a special waveform. This waveform addresses a concern that many soldiers have with blue-force tracking systems – that an enemy could potentially intercept the tracking signal for surveillance or targeting purposes. The waveform has very low probability of intercept and low probability of detection and is also encrypted. It is generally indistinguishable from radio background noise, so it provides the user with excellent security and minimum risk of exposure. To further increase security the GB transmission uses a very short burst that is spread over several frequencies (spread spectrum transmission).

Grenadier BRAT uses existing collection and dissemination architectures to provide its data to the commander. Blue-force tracking data can be received and processed with Army Tactical Exploitation of National Capabilities equipment and displayed as standard military symbols. The system's blue-force data can be combined with red-force data to provide the commander with a near-real time view of both friendly and enemy forces on the battlefield.

Fielding the System

The Army procured an initial 400 Grenadier BRAT devices as part of a Warfighter Rapid Acquisition Program (WRAP) with an option to buy 400 more. The Army Space Program Office (ASPO) oversees this WRAP. After successfully completing government acceptance testing in September 2001, ASPO fielded the initial Grenadier BRAT systems to Special Operations Forces in support of OPERATION ENDURING FREEDOM. Thus far, ASPO has fielded more than 150 Grenadier BRAT systems to Army Special Operations Forces, providing an organic blue force tracking capability and the ability to send discrete reports via unique brevity codes back to higher headquarters.

Since late 2001, ASPO has worked with the U.S. Army Europe (USAREUR) and the Aviation Engineering Directorate in Huntsville, Alabama, on an Air Worthiness Release (AWR) for the Grenadier BRAT system on the AH-64D Apache Longbow aircraft. The AWR has been completed and will certify the simultaneous use of Grenadier BRAT and the Tactical Engagement Simulation System (TESS) onboard the AH-64D, which will allow pilots to conduct AH-64 training (via TESS) while tracking their aircraft on real world Command, Control, Communications, and Intelligence (C3I) systems. The initial fielding of Grenadier BRAT to USAREUR's 6th Squadron, 6th Cavalry Regiment (Apache Longbow) began in July 2002.